

SEQUENCE LISTING

<110> University of Cape Town
South African Medical Research Council

<120> A method for the production of HIV-1 Gag Virus-Like Particles

<130> PA132610/PCT

<140> PCT/IB03/

<141> 2003-12-04

<160> 4

<170> PatentIn version 3.1

<210> 1

<211> 1549

<212> DNA

<213> Human immunodeficiency virus type 1

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<212> DNA

<213> Human immunodeficiency virus type 1

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 ttagataAGA tagAGGAAGA acaAAACAAA tgtcAGCAA AAACGAGCA ggcaAAAGCG 360
 gctgacGGGA aagtcaGTCA aaattatCCT atagtGAGA atCTCAAGG gcaaATGGTA 420
 catcaAGCCA tatCACCTAG AACCTTGAAAT gcatGGTAA aAGTAATAGA agAAAAGGCT 480
 tttagcccAG aggtAAATACC catgtttACA gcattATCAG aaggAGCCAC CCCACAAGAT 540
 ttAAACACCA tGTTAAATAC agtGGGGGGA caccaAGCAG ccatGCAAAT gttAAAGAT 600
 actattaATG aagaggCTGC agaATGGGAT agattACATC cagtCCATGC ggggcTATT 660
 gcacccAGGCC agatGAGAGA accaAGGGGA agtGACATAG cAGGAACTAC tagtACCCtt 720
 cagGAACAAA tagCATGGAT gacaAGTAAC ccACCTATTc cAGTGGAGA catCTATAAA 780
 agatGGATAA ttctGGGGTT aaataAAATA gtGAGAATgt atAGCCCGGT cAGCATTtG 840
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 gactgcactg agaggcaggc taATTTTTA gggAAAATTt ggCCttCCCA caAGGGGAGG 1320

ccagggatt tccttcagaa cagaccagag ccaacagccc caccaggaga gagttcagg	1380
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<212> PRT

<213> Human immunodeficiency virus type 1

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Leu Lys His Ile Val Trp Ala Ser Arg Glu Leu Glu Arg Phe Ala Leu	
35 40 45	

Asn Pro Gly Leu Leu Glu Thr Ser Glu Gly Cys Lys Gln Ile Met Lys	
50 55 60	

Gln Leu Gln Pro Ala Leu Gln Thr Gly Thr Glu Glu Leu Lys Ser Leu	
65 70 75 80	

Tyr Asn Thr Val Ala Thr Leu Tyr Cys Val His Glu Lys Ile Glu Val	
85 90 95	

Arg Asp Thr Lys Glu Ala Leu Asp Lys Ile Glu Glu Glu Gln Asn Lys	
100 105 110	

Cys Gln Gln Lys Thr Gln Gln Ala Lys Ala Ala Asp Gly Lys Val Ser	
115 120 125	

Gln Asn Tyr Pro Ile Val Gln Asn Leu Gln Gly Gln Met Val His Gln	
130 135 140	

Ala Ile Ser Pro Arg Thr Leu Asn Ala Trp Val Lys Val Ile Glu Glu	
145 150 155 160	

Lys Ala Phe Ser Pro Glu Val Ile Pro Met Phe Thr Ala Leu Ser Glu	
165 170 175	

Gly Ala Thr Pro Gln Asp Leu Asn Thr Met Leu Asn Thr Val Gly Gly	
180 185 190	

His Gln Ala Ala Met Gln Met Leu Lys Asp Thr Ile Asn Glu Glu Ala	
195 200 205	

Ala Glu Trp Asp Arg Leu His Pro Val His Ala Gly Pro Ile Ala Pro	
210 215 220	

Gly Gln Met Arg Glu Pro Arg Gly Ser Asp Ile Ala Gly Thr Thr Ser
225 230 235 240

Thr Leu Gln Glu Gln Ile Ala Trp Met Thr Ser Asn Pro Pro Ile Pro
245 250 255

Val Gly Asp Ile Tyr Lys Arg Trp Ile Ile Leu Gly Leu Asn Lys Ile
260 265 270

Val Arg Met Tyr Ser Pro Val Ser Ile Leu Asp Ile Arg Gln Gly Pro
275 280 285

Lys Glu Pro Phe Arg Asp Tyr Val Asp Arg Phe Phe Lys Thr Leu Arg
290 295 300

Ala Glu Gln Ala Thr Gln Glu Val Lys Asn Trp Met Thr Asp Thr Leu
305 310 315 320

Leu Val Gln Asn Ala Asn Pro Asp Cys Lys Thr Ile Leu Arg Ala Leu
325 330 335

Gly Pro Gly Ala Thr Leu Glu Glu Met Met Thr Ala Cys Gln Gly Val
340 345 350

Gly Gly Pro Gly His Lys Ala Arg Val Leu Ala Glu Ala Met Ser Gln
355 360 365

Thr Asn Ser Gly Asn Ile Met Met Gln Arg Ser Asn Phe Lys Gly Pro
370 375 380

Arg Arg Ile Val Lys Cys Phe Asn Cys Gly Lys Glu Gly His Ile Ala
385 390 395 400

Arg Asn Cys Arg Ala Pro Arg Lys Lys Gly Cys Trp Lys Cys Gly Lys
405 410 415

Glu Gly His Gln Met Lys Asp Cys Thr Glu Arg Gln Ala Asn Phe Leu
420 425 430

Gly Lys Ile Trp Pro Ser His Lys Gly Arg Pro Gly Asn Phe Leu Gln
435 440 445

Asn Arg Pro Glu Pro Thr Ala Pro Pro Ala Glu Ser Phe Arg Phe Glu
450 455 460

Glu Thr Thr Pro Ala Pro Lys Gln Glu Pro Ile Glu Arg Glu Pro Leu
465 470 475 480

Thr Ser Leu Lys Ser Leu Phe Gly Ser Asp Pro Leu Ser Gln Lys Gly
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Ala Arg Gln Gly Arg Leu Ser Thr Gln Glu Gln Met Ile Gln Tyr Cys
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Arg

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<212> PRT

<213> Human immunodeficiency virus type 1

<400> 4

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20 25 30

His Ile Val Trp Ala Ser Arg Glu Leu Glu Arg Phe Ala Leu Asn Pro
35 40 45

Gly Leu Leu Glu Thr Ser Glu Gly Cys Lys Gln Ile Met Lys Gln Leu
50 55 60

Gln Pro Ala Leu Gln Thr Gly Thr Glu Glu Leu Lys Ser Leu Tyr Asn
65 70 75 80

Thr Val Ala Thr Leu Tyr Cys Val His Glu Lys Ile Glu Val Arg Asp
85 90 95

Thr Lys Glu Ala Leu Asp Lys Ile Glu Glu Gln Asn Lys Cys Gln
100 105 110

Gln Lys Thr Gln Gln Ala Lys Ala Ala Asp Gly Lys Val Ser Gln Asn
115 120 125

Tyr Pro Ile Val Gln Asn Leu Gln Gly Gln Met Val His Gln Ala Ile
130 135 140

Ser Pro Arg Thr Leu Asn Ala Trp Val Lys Val Ile Glu Glu Lys Ala
145 150 155 160

Phe Ser Pro Glu Val Ile Pro Met Phe Thr Ala Leu Ser Glu Gly Ala
165 170 175

Thr Pro Gln Asp Leu Asn Thr Met Leu Asn Thr Val Gly Gly His Gln
180 185 190

Ala Ala Met Gln Met Leu Lys Asp Thr Ile Asn Glu Glu Ala Ala Glu
195 200 205

Trp Asp Arg Leu His Pro Val His Ala Gly Pro Ile Ala Pro Gly Gln
210 215 220

Met Arg Glu Pro Arg Gly Ser Asp Ile Ala Gly Thr Thr Ser Thr Leu
225 230 235 240

Gln Glu Gln Ile Ala Trp Met Thr Ser Asn Pro Pro Ile Pro Val Gly

245 250 255

Asp Ile Tyr Lys Arg Trp Ile Ile Leu Gly Leu Asn Lys Ile Val Arg
260 265 270

Met Tyr Ser Pro Val Ser Ile Leu Asp Ile Arg Gln Gly Pro Lys Glu
275 280 285

Pro Phe Arg Asp Tyr Val Asp Arg Phe Phe Lys Thr Leu Arg Ala Glu
290 295 300

Gln Ala Thr Gln Glu Val Lys Asn Trp Met Thr Asp Thr Leu Leu Val
305 310 315 320

Gln Asn Ala Asn Pro Asp Cys Lys Thr Ile Leu Arg Ala Leu Gly Pro
325 330 335

Gly Ala Thr Leu Glu Glu Met Met Thr Ala Cys Gln Gly Val Gly Gly
340 345 350

Pro Gly His Lys Ala Arg Val Leu Ala Glu Ala Met Ser Gln Thr Asn
355 360 365

Ser Gly Asn Ile Met Met Gln Arg Ser Asn Phe Lys Gly Pro Arg Arg
370 375 380

Ile Val Lys Cys Phe Asn Cys Gly Lys Glu Gly His Ile Ala Arg Asn
385 390 395 400

Cys Arg Ala Pro Arg Lys Lys Gly Cys Trp Lys Cys Gly Lys Glu Gly
405 410 415

His Gln Met Lys Asp Cys Thr Glu Arg Gln Ala Asn Phe Leu Gly Lys
420 425 430

Ile Trp Pro Ser His Lys Gly Arg Pro Gly Asn Phe Leu Gln Asn Arg
435 440 445

Pro Glu Pro Thr Ala Pro Pro Ala Glu Ser Phe Arg Phe Glu Glu Thr
450 455 460

Thr Pro Ala Pro Lys Gln Glu Pro Ile Glu Arg Glu Pro Leu Thr Ser
465 470 475 480

Leu Lys Ser Leu Phe Gly Ser Asp Pro Leu Ser Gln
485 490